

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

REMARKS

Reconsideration and further examination of this application is hereby requested. Claims 13-16, 20, and 21 are currently pending in the application.

A. CLAIM OBJECTION

Claim 16 has been objected to on the basis that it appears to be ambiguous as to which words in the claim were to have been deleted in the Amendment filed November 6, 2003. Applicant has reviewed the copy of the Amendment in Applicant's file and it appears to be clear that it was indeed intended for the phrase "a first article support disposed inside the" to have been deleted from claim 16. To verify this, a complete listing of the claims is made a part of this filing, so as to remove all doubt as to the intended language for claim 16.

B. REJECTIONS BASED ON NAKAI, YAMAZAKI, HONGOH, TURNER & CHENG

Claims 13, 16, 20, and 21 have been rejected under 35 U.S.C. § 103(a) as being obvious over of Nakai (JP 62-026811) in view of Yamazaki (US 5302226) or Hongoh (US 6358324). Claim 14 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Nakai in view of Yamazaki or Hongoh, and further in view of Turner (US 5509464). Claim 15 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Nakai in view of Yamazaki or Hongoh, and further in view of Cheng (5304248). These rejections are

Date: August 13, 2004

- 5 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

respectfully traversed based on the following arguments.

In order for a patent claim to be obvious, the prior art must teach each and every limitation of the claim. That is because the claim must be considered as a whole - it may not be distilled down to a gist.

Independent claim 20 recites the limitation of "plural article supports disposed inside the chamber body" (refer to line 8) and independent claim 21 recites a similar limitation (refer to line 8).

When considered together, the Nakai, Yamazaki, Hongoh, Turner, and Cheng references do not teach or suggest this limitation. The Examiner has identified Nakai as providing such a teaching. However, this is based on a mistaken interpretation of the Nakai reference. The figures of Nakai do not actually illustrate plural article supports. Rather the figures of Nakai illustrate a single article support that may be moved between multiple positions within a chamber. This understanding of Nakai is based on careful review of the English language abstract (see particularly the last sentence) and the arrows in figures 2 and 4 showing movement, as well as the fact that the article support is shown in solid lines only in one position in the chamber and in broken lines in an alternate position in the chamber. The other references cited (Yamazaki, Hongoh, Turner, and Cheng) do not

Date: August 13, 2004

- 6 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

provide teachings or suggestions that make up for this shortcoming of Nakai.

Accordingly, the combination of Nakai, Yamazaki, Hongoh, Turner, and Cheng does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

C. REJECTIONS BASED ON TSUKADA, YAMAZAKI, HONGOH, TURNER & CHENG

Claims 13, 16, 20, and 21 have been rejected under 35 U.S.C. § 103(a) as being obvious over of Tsukada (US 4482419) in view of Yamazaki (US 5302226) or Hongoh (US 6358324). Claim 14 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Tsukada in view of Yamazaki or Hongoh, and further in view of Turner. Claim 15 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Tsukada in view of Yamazaki or Hongoh, and further in view of Cheng. These rejections are respectfully traversed based on the following arguments.

The Examiner proposes to modify the processing chamber system of Tsukada to have a pumping port located in the bottom wall of the chamber based on the motivation "to efficiently and uniformly evacuate the entire process chamber and maintained a uniform plasma density in the process chamber." See the Office Action at page 7, line 20, through page 8, line 3.

This motivation (drawn by the Examiner from the Yamazaki and Hongoh references) is antithetical to the basic underlying

Date: August 13, 2004

- 7 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

operating principle of the Tsukada system. Tsukada actually relies on the fact that each of the plural subchambers has etch conditions that are different from one another. If the entire process chamber were evacuated so as to maintain a uniform plasma density then the basic underlying operating principle of Tsukada would be defeated. This subversion of the Tsukada teachings negatives obviousness. The further consideration of Turner and Cheng with Tsukada, Yamazaki, and Hongoh does not rectify this subversion of the Tsukada teachings.

Accordingly, the combination of Tsukada, Yamazaki, Hongoh, Turner, and Cheng does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

D. REJECTIONS BASED ON YAMAZAKI, TSUKADA, NAKAI, TURNER & CHENG

Claims 13, 16, 20, and 21 have been rejected under 35 U.S.C. § 103(a) as being obvious over of Yamazaki in view of Tsukada or Nakai. Claim 14 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Yamazaki in view of Tsukada or Nakai, and further in view of Turner. Claim 15 has been rejected under 35 U.S.C. § 103(a) as being obvious over of Yamazaki in view of Tsukada or Nakai, and further in view of Cheng. These rejections are respectfully traversed based on the following arguments. The alternative application of Tsukada is addressed first, and then the alternative application of Nakai.

Date: August 13, 2004

- 8 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

D.1. MODIFICATION OF YAMAZAKI BASED ON TSUKADA TEACHINGS

The Examiner proposes to modify the processing chamber system of Yamazaki to have plural article holders and a partition structure in the chamber based on the motivation that "the processing time is reduced and the throughput of the apparatus is increased" as a result of plural articles being processed at the same time. See the Office Action at page 11, last three lines. However, this motivation does not appear to be applicable to the Tsukada teaching reference. Although it is true that Tsukada does process more than one article in its chamber at one time, it is far from clear that this would reduce overall processing time or increase throughput.

Take, for example, the Tsukada embodiment where six chambers are ganged together in sequence, with each of the chambers performing a particular sequential etch step. Each article to be processed must go through the six chambers sequentially in lock step. This means that the overall time it takes each article to progress through the six chambers is not the sum of the times to complete each of the six etch steps. Rather, the overall time it takes each article to progress through the six chambers is the time to complete the slowest etch step multiplied by six. Thus, whatever the virtues of the Tsukada system may be, time efficiency is not one of them. The focus of the Tsukada

Date: August 13, 2004

- 9 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

disclosure is etch uniformity, not increasing throughput.

Accordingly, the motivation to modify the prior art identified by the Examiner is not accurate in the case of the Yamazaki/Tsukada combination. The further consideration of the Turner and Cheng references provides no reason that would rectify this deficiency of the underlying Yamazaki/Tsukada combination. Absent a motivation to modify the prior art, there is no *prima facie* case of obviousness.

Accordingly, the combination of Yamazaki, Tsukada, Turner, and Cheng does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

D.2. MODIFICATION OF YAMAZAKI BASED ON NAKAI TEACHINGS

In order for a patent claim to be obvious, the prior art must teach each and every limitation of the claim. That is because the claim must be considered as a whole - it may not be distilled down to a gist.

Independent claim 20 recites the limitation of "plural article supports disposed inside the chamber body" (refer to line 8) and independent claim 21 recites a similar limitation (refer to line 8).

When considered together, the Yamazaki, Nakai, Turner, and Cheng references do not teach or suggest this limitation. The Examiner has identified Nakai as providing such a teaching.

Date: August 13, 2004

- 10 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

However, this is based on a mistaken interpretation of the Nakai reference. The figures of Nakai do not actually illustrate plural article supports. Rather the figures of Nakai illustrate a single article support that may be moved between multiple positions within a chamber. This understanding of Nakai is based on careful review of the English language abstract (see particularly the last sentence) and the arrows in figures 2 and 4 showing movement, as well as the fact that the article support is shown in solid lines only in one position in the chamber and in broken lines in an alternate position in the chamber. The other references cited (Yamazaki, Turner, and Cheng) do not provide teachings or suggestions that make up for this shortcoming of Nakai.

Accordingly, the combination of Yamazaki, Nakai, Turner, and Cheng does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

E. REJECTION BASED ON CHENG, TSUKADA & NAKAI

Claims 13-16, 20, and 21 have been rejected under 35 U.S.C. § 103(a) as being obvious over of Cheng in view of Tsukada or Nakai. This rejection is respectfully traversed based on the following arguments. The alternative application of Tsukada is addressed first, and then the alternative application of Nakai.

Date: August 13, 2004

- 11 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

E.1. MODIFICATION OF CHENG BASED ON TSUKADA TEACHINGS

The Examiner proposes to modify the processing chamber system of Cheng to have plural article holders and a partition structure in the chamber based on the motivation that "the processing time is reduced and the throughput of the apparatus is increased" as a result of plural articles being processed at the same time. See the Office Action at page 14, last three lines. However, this motivation does not appear to be applicable to the Tsukada teaching reference. Although it is true that Tsukada does process more than one article in its chamber at one time, it is far from clear that this would reduce overall processing time or increase throughput.

Take, for example, the Tsukada embodiment where six chambers are ganged together in sequence, with each of the chambers performing a particular sequential etch step. Each article to be processed must go through the six chambers sequentially in lock step. This means that the overall time it takes each article to progress through the six chambers is not the sum of the times to complete each of the six etch steps. Rather, the overall time it takes each article to progress through the six chambers is the time to complete the slowest etch step multiplied by six. Thus, whatever the virtues of the Tsukada system may be, time efficiency is not one of them. The focus of the Tsukada

Date: August 13, 2004

- 12 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

disclosure is etch uniformity, not increasing throughput.

Accordingly, the motivation to modify the prior art identified by the Examiner is not accurate in the case of the Cheng/Tsukada combination. Absent a motivation to modify the prior art, there is no *prima facie* case of obviousness.

Accordingly, the combination of Cheng and Tsukada does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

E.2. MODIFICATION OF CHENG BASED ON NAKAI TEACHINGS

In order for a patent claim to be obvious, the prior art must teach each and every limitation of the claim. That is because the claim must be considered as a whole - it may not be distilled down to a gist.

Independent claim 20 recites the limitation of "plural article supports disposed inside the chamber body" (refer to line 8) and independent claim 21 recites a similar limitation (refer to line 8).

When considered together, the Cheng and Nakai references do not teach or suggest this limitation. The Examiner has identified Nakai as providing such a teaching. However, this is based on a mistaken interpretation of the Nakai reference. The figures of Nakai do not actually illustrate plural article supports. Rather the figures of Nakai illustrate a single

Date: August 13, 2004

- 13 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

PATENT APPLICATION

article support that may be moved between multiple positions within a chamber. This understanding of Nakai is based on careful review of the English language abstract (see particularly the last sentence) and the arrows in figures 2 and 4 showing movement, as well as the fact that the article support is shown in solid lines only in one position in the chamber and in broken lines in an alternate position in the chamber. The Cheng reference does not provide teachings or suggestions that make up for this shortcoming of Nakai.

Accordingly, the combination of Cheng and Nakai does not establish a *prima facie* case of obviousness with respect to claims 13-16, 20, and 21.

F. CLOSING

In view of the above, Applicant respectfully submits that independent claims 20 and 21 are patentable over the prior art. Applicant further submits that dependent claims 13-16 are patentable, at least as being dependent from patentable independent claims, and are further patentable due to the additional limitations recited therein.

For the above reasons, Applicant respectfully submits that the application is in condition for allowance with claims 13-16, 20, and 21. If there remain any issues that may be disposed of

Date: August 13, 2004

- 14 -

RA&M Ref. No.: 2616-006

REQUEST FOR RECONSIDERATION
Appln. No. 09/834,501

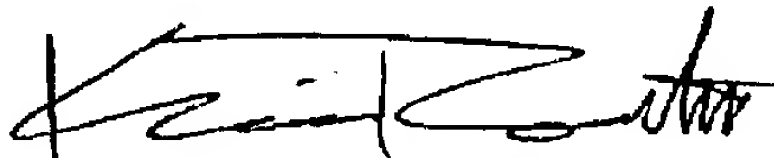
PATENT APPLICATION

via a telephonic interview, the Examiner is kindly invited to contact the undersigned at the number given below.

The Director of the U.S. Patent & Trademark Office is authorized to charge any necessary fees, and conversely, deposit any credit balance, to Deposit Account No. 18-1579.

Respectfully submitted,

ROBERTS ABOKHAIR & MARDULA, LLC



Kevin L. PONTIUS
Reg. No. 37512

Please direct phone calls to:
Kevin Pontius at (505) 922-1400

Please continue to direct correspondence to:
PATENT COUNSEL
APPLIED MATERIALS, INC.
Legal Affairs Department
P.O. Box 450A
Santa Clara, CA 95052

Date: August 13, 2004

- 15 -

RA&M Ref. No.: 2616-006